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Library Note

Leaving the European Union: Funding for Universities and Scientific Research

Almost half of university income in the UK comes from tuition fees and education contracts, totalling £15.6 billion (47 percent) in 2014/15. Home and EU domiciled student course fees accounted for £10.481 billion of this, with £4.226 billion coming from fees paid by non-EU students. Students from EU countries (other than the UK) represent 5.5 percent of students at UK universities. Full-time students from EU countries other than the UK are eligible to apply for a tuition fee loan of up to £9,000 per academic year, like UK students.

Following the referendum in June, there has been doubt expressed about how EU students will be categorised once the UK leaves the EU and how this will affect university income. There are suggestions this may result in a fall in EU students coming to the UK but that such a scenario may present income opportunities for universities should such students be eligible to be charged the same fees as non-EU students. In October 2016, the Government announced that EU students applying for university places in England in the 2017–18 academic year would continue to be eligible for student loans and grants. This has also been confirmed by ministers in Scotland, Wales and Northern Ireland.

Research policy is a shared competence between the EU and member states. According to the Office for National Statistics, UK gross domestic expenditure on research and development performed in the UK in 2014, in current prices, was £30.6 billion. Business was reported as accounting for 65 percent of this expenditure; higher education (which includes universities and higher education institutes) for 26 percent; government and research councils for 7 percent; and the private non-profit sector (which includes registered charities and trusts) for 2 percent. The UK receives funds from the EU budget, worth around £5.6 billion per annum in recent years. These funds go to recipients across the UK, including to the science and research sectors. In 2014/15, EU sources accounted for 2.5 percent of UK university income, providing £836 million in research grants and contracts.

The Prime Minister, Theresa May, has stated that the Government is committed to ensuring a positive outcome for UK science as the UK withdraws from the EU. In August 2016, the Government announced that it would guarantee funding for projects funded through the EU's Horizon 2020 programme, even when specific projects continue beyond the UK's departure from the EU.

On 3 November 2016, the House of Lords will debate the potential impact of the United Kingdom's withdrawal from the European Union on funding for universities and scientific research. This briefing provides information on current university and research funding in the UK and identifies some of the key issues raised about this funding following the UK's referendum vote to withdraw from the EU.

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1. Background

1.1 UK University Funding

According to the Higher Education Statistics Agency (HESA), the total income in 2014/15 of the 162 UK higher education (HE) providers was £33.2 billion.[1] This represented an increase of 8 percent compared with the income of £30.7 billion for the previous year.[2]

Almost half of this income came from tuition fees and education contracts, which contributed £15.6 billion or 47 percent of the total.[3] Home and EU domiciled student course fees accounted for £10.481 billion of this, with £4.226 billion coming from fees paid by non-EU students.

HESA noted that there was an increase across all income sources except for funding body grants which decreased by 13.3 percent. The largest increase was observed in research grants and contracts (16.4 percent).[4] In 2014/15, the EU accounted for 2.5 percent of UK university income, providing £836 million in research grants and contracts.[5]

Table 1 sets out an overview of university income by source.

Table 1: UK University Income 2014/15[6]

Income Source	2014/15 (£ thousands)	% Income
Funding body grants	5279035	15.9
Tuition fees and education contracts	15585517	46.7
Research grants and contracts	5912016	17.8
Other income	6062545	18.3
Endowment and investment income	359559	1.1
Total income	**33198672**	…
Less: share of income in joint venture(s)	(167567)	…
Net income	**33031105**	…

The total expenditure of UK HE providers was £31.2 billion, of which £17.1 billion (55 percent) was spent on staff costs.[7]

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[1] Higher Education Statistics Agency, 'Income and Expenditure of Higher Education Providers in 2014/15', 3 March 2016. The total income figure includes £0.5 billion of exceptional income reported in respect of the Research and Development Expenditure Credit scheme. HESA Finance data is collected from all publicly funded Higher Education Institutions in the UK, plus the University of Buckingham, which is a privately funded higher education provider.
[2] Higher Education Statistics Agency, 'Introduction—Finances 2014/15', accessed 27 October 2016.
[3] ibid.
[4] ibid.
[5] Higher Education Statistics Agency, 'Income and Expenditure of Higher Education Providers in 2014/15', 3 March 2016.
[6] Higher Education Statistics Agency, 'Table D: Income by source 2014/15 and 2013/14', accessed 27 October 2016. The total income figure includes £0.5 billion of exceptional income reported in respect of the Research and Development Expenditure Credit scheme.

In the 2014–15 academic year, 80.7 percent of students in higher education were from the UK (undergraduate and postgraduate).[8] Students from EU countries (other than the UK) represented 5.5 percent, with 13.8 percent coming from countries outside the EU. Full-time undergraduate students from EU countries other than the UK are eligible to apply for a tuition fee loan of up to £9,000 per academic year, like UK students.[9] EU students may also be eligible for financial assistance with living costs if they meet the residency requirements. EU students pay no tuition fees in Scotland, and tuition fees in Wales and Northern Ireland are capped at a lower level than in England.[10]

1.2 UK Scientific Research Funding

Public funding for university and scientific research in the UK comes from a number of sources, including UK-wide and constituent nation-specific bodies. Under the dual support system, funding is allocated for research via block grants awarded to higher education institutions by constituent nation-specific higher education funding bodies and by UK-wide research councils.[11] This spending, together with funding for the UK Space Agency and national academies, is provided from the science and research budget administered by the Department for Business, Energy and Industrial Strategy (formerly the Department for Business, Innovation and Skills).[12] For the 2016/17 financial year, the resource budget in this allocation totalled £4.8 billion and the capital budget totalled £1.1 billion.[13]

Funds are also spent on research by business and private non-profit bodies. The most recent statistical bulletin published by the Office for National Statistics (ONS) on the subject of gross domestic expenditure on research and development includes the following main points:

- In 2014, the gross domestic expenditure on research and development (R&D) performed in the UK, in current prices, increased by 5 percent to £30.6 billion compared with £29.3 billion in 2013.

- In 2014, total gross domestic expenditure on R&D performed in the UK, in constant prices, increased by 3 percent compared with £29.7 billion in 2013.

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[7] Higher Education Statistics Agency, 'Income and Expenditure of Higher Education Providers in 2014/15', 3 March 2016.
[8] Higher Education Statistics Agency, 'Introduction: Students 2014/15', accessed 25 October 2016. See 'Table B: HE Students by Mode of Study, Sex and Domicile 2014/15'.
[9] Gov.uk, 'Student Finance', accessed 25 October 2016.
[10] UCAS, 'Undergraduate Tuition Fees and Student Loans', accessed 27 October 2016.
[11] For further information see: House of Commons Library, *Higher Education and Research Bill 2016 [Bill No 004 of 2016–17]*, 30 June 2016, pp 82–6. The four higher education funding bodies consist of the Higher Education Funding Council for England, the Scottish Funding Council, the Higher Education Funding Council for Wales and the Department for Employment and Learning in Northern Ireland. The seven UK research councils consist of the Arts and Humanities Research Council, the Biotechnology and Biological Sciences Research Council, the Engineering and Physical Sciences Research Council, the, Economic and Social Research Council, the Medical Research Council, the Natural Environment Research Council and the Science and Technology Facilities Council. These seven research councils have formed a strategic partnership: Research Councils UK.
[12] Department for Business, Innovation and Skills, *The Allocation of Science and Research Funding: 2016/17 to 2019/20*, March 2016. The UK's four independent national academies are the Royal Society, the British Academy, the Royal Academy of Engineering and the Academy of Medical Sciences.
[13] Department for Business, Innovation and Skills, *The Allocation of Science and Research Funding: 2016/17 to 2019/20*, March 2016, p 4. Further information on domestic funding arrangements can be found in the House of Commons Library briefings *Spending on Research and Development in the UK* (21 July 2015) and *Support for Science* (15 July 2016).

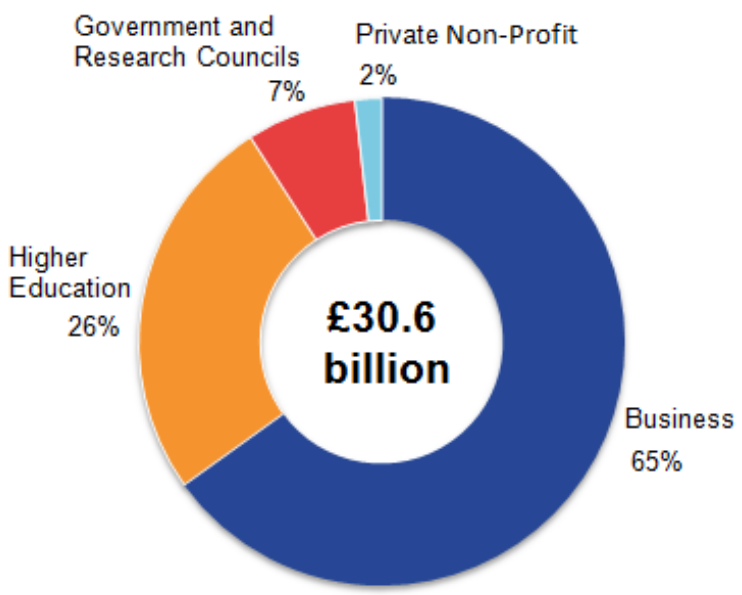
- In constant prices, R&D expenditure increased by 45 percent from the 1990 estimate of £21.1 billion. Expenditure reached an all-time high of £30.6 billion in 2014.

- The business sector accounted for £19.9 billion of expenditure in 2014, representing 65 percent of total expenditure on R&D performed in the UK. This is an increase of 6 percent in current prices from £18.8 billion in 2013.

- Total R&D expenditure in the UK in 2014 represented 1.67 percent of gross domestic product (GDP), unchanged from 2013. This was below the European Union (EU-28) provisional estimate of 2.03 percent of GDP, but the eleventh highest of all member countries.[14]

Business was reported as accounting for 65 percent of expenditure; higher education (which includes universities and higher education institutes) for 26 percent; government and research councils for 7 percent; and the private non-profit sector (which includes registered charities and trusts) for 2 percent.[15]

The bulletin included the following graphic illustrating the composition of expenditure:



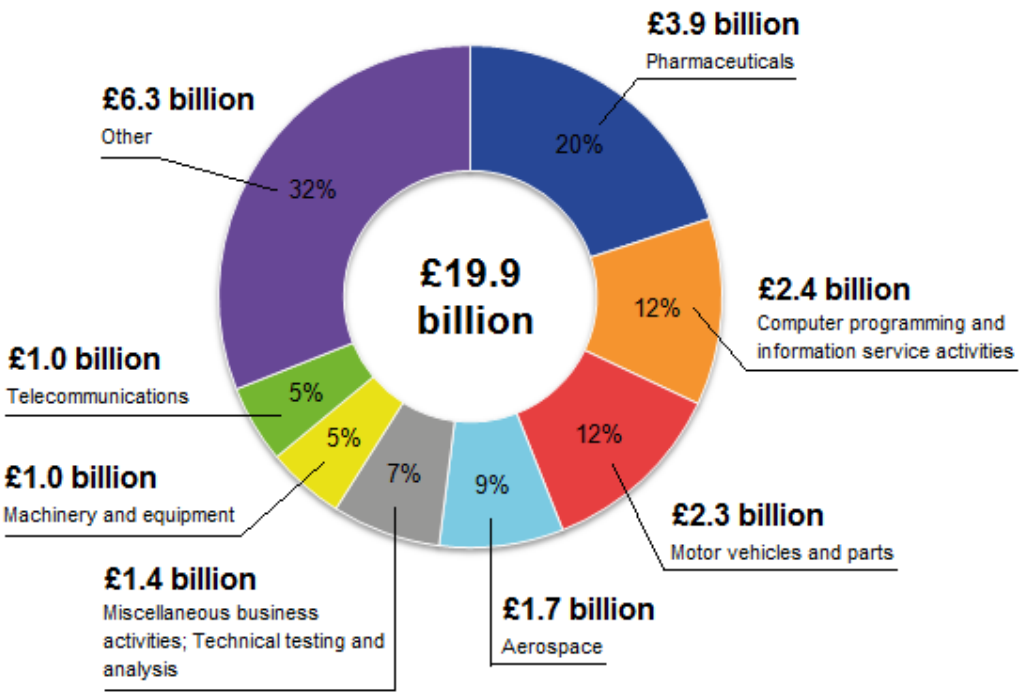
[14] Office for National Statistics, 'Statistical Bulletin: UK Gross Domestic Expenditure on Research and Development—2014', 18 March 2016. It should be noted that the ONS uses the OECD definition of research and development taken from the *Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development* (2002). That is, "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". This does not include education, training, bibliographic and referencing work, routine technological development and the management of existing knowledge and data (House of Commons Library, *Spending on Research and Development in the UK*, 21 July 2015, p 4).

[15] Office for National Statistics, 'Statistical Bulletin: UK Gross Domestic Expenditure on Research and Development–2014', 18 March 2016. For further information see: Office for National Statistics, 'Statistical Bulletin: Business Enterprise Research and Development—2014', 20 November 2015; and 'Statistical Bulletin: UK Government Expenditure on Science, Engineering and Technology—2014', 15 July 2016.

As stated above, the business sector performed the most research and development of any sector in the UK in 2014.[16] Its 65 percent share equated to £19.9 billion of expenditure. The ONS has estimated that the business sector research and development spend in 2014 was distributed among product groups as follows:

- Pharmaceuticals (£3.9 billion).
- Computer programming and information service activities (£2.4 billion).
- Motor vehicles and parts (£2.3 billion).
- Aerospace (£1.7 billion).
- Miscellaneous business activities (£1.4 billion).
- Machinery and equipment (£1.0 billion).
- Telecommunications (£1.0 billion).
- Other (£6.3 billion).[17]

The bulletin included the following visual representation of this breakdown:



The Government's Higher Education and Research Bill would, amongst other changes, enact some of the recommendations in the Nurse Review of the UK research councils, including the creation of a new body—UK Research and Innovation (UKRI). This body would integrate the seven research councils and Innovate UK (the UK's innovation agency), along with a new body—Research England.[18] The Bill is currently under consideration in the House of Commons.[19]

[16] Office for National Statistics, 'Statistical Bulletin: UK Gross Domestic Expenditure on Research and Development—2014', 18 March 2016.
[17] ibid.
[18] See: House of Commons Library, *Higher Education and Research Bill 2016 [Bill No 004 of 2016–17]*, 30 June 2016, p 5; and Department for Business, Innovation and Skills, 'Independent Report: Nurse Review of Research Councils—Recommendations', 19 November 2015.
[19] UK Parliament, 'Higher Education and Research Bill 2016–17', accessed 24 October 2016.

Government Policy Before the Referendum

The Conservative Party manifesto published ahead of the 2015 general election mentioned support for science and research in a number of contexts. In particular, it included the following statements:

> **We will continue to invest in science, back our industrial strategies and make Britain the technology centre of Europe**
> Great science is worthwhile in its own right and yields enormous practical benefits too—curing diseases, driving technological innovation, promoting business investment and informing public policy for the better. We ring-fenced the science budget by making difficult choices to reduce spending in other areas. Now we will invest new capital on a record scale—£6.9 billion in the UK's research infrastructure up to 2021—which will mean new equipment, new laboratories and new research institutes […]
>
> **We will ensure that our universities remain world-leading**
> We will maintain our universities' reputation for world-class research and academic excellence. Through the Nurse Review of research councils, we will seek to ensure that the UK continues to support world-leading science, and invests public money in the best possible way.[20]

In its *Spending Review and Autumn Statement 2015*, the Government announced that it would "protect the £4.7 billion science budget in real terms over the Parliament" and that it would deliver on the "long term science capital commitment of £6.9 billion between 2015 and 2021 to support the UK's world-class research base", equating to around £1.1 billion per year.[21]

European Union Funding

Research policy is a shared competence between the EU and member states, as outlined in the Treaty on the Functioning of the EU.[22] The House of Lords Science and Technology Committee has observed that the EU funding system for science and research is complex and that there are many ways in which the EU aims to fulfil its shared competence in research policy.[23] The Committee further observed that it is "challenging to define unambiguously the level of EU spending on research and development in the UK".[24] For example, as noted by HM Treasury in written evidence to the House of Commons Science and Technology Committee in October 2016:

> The UK receives funds from the EU budget, worth around £5.6 billion per annum in recent years. These funds go to recipients across the UK, including to the science and research sectors. Some of these funds (ie Structural Funds) are administered by the UK public sector via departmental budgets. The rest (ie Horizon 2020 funding) is paid directly to recipients by the EU.[25]

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[20] Conservative Party, *Conservative Party Manifesto 2015*, April 2015, pp 21 and 35.
[21] HM Treasury, *Spending Review and Autumn Statement 2015*, November 2015, pp 22 and 48.
[22] House of Lords Science and Technology Committee, *EU Membership and UK Science*, 20 April 2016, HL Paper 127 of session 2015–16, p 26.
[23] ibid, p 33.
[24] ibid, p 40.
[25] HM Treasury, *Written Evidence to the House of Commons Science and Technology Committee*, October 2016.

The House of Lords Science and Technology Committee has recorded that the "EU funding system for science, research and innovation is complex".[26] In addition, and as the Royal Society has noted, the EU's influence varies across different parts of the UK's research ecosystem.[27]

In brief, the EU supports science and research through five main mechanisms:

- The Horizon 2020 programme (formerly the series of Framework Programmes 1–7).
- European Structural and Investment Funds (ESIF).
- Sectoral research and development programmes.
- Other connected programmes.
- Partnerships.[28]

The Committee noted that "some of these programmes involve grants, some are methods of financing and others are platforms designed to facilitate collaboration and connections".[29]

The Royal Society has summarised the position of the UK and EU research funding in the last full Framework Programme period (2007–2013) as follows:

> Overall the UK is a net contributor to the EU budget. Over the period 2007–2013, the UK contributed €77.7 billion to the EU (10.5 percent of the total EU income from member states), and received €47.5 billion in EU funding (6 percent of the total EU expenditure to member states).
>
> The UK is one of the largest recipients of research funding in the EU and, although national contributions to the EU budget are not itemised, analyses suggest that the UK receives a greater amount of EU research funding than it contributes. The UK Office of National Statistics (ONS) report an indicative figure for the UK's contribution to EU research and development of €5.4 billion over the period 2007–2013. During this time, the UK received €8.8 billion in direct EU funding for research, development and innovation activities.[30]

This was the basis of the House of Lords Science and Technology Committee's observation that science was a "significant dimension of the UK's membership of the EU".[31]

The Horizon 2020 programme will have an estimated €80 billion of funding available over seven years (2014 to 2020).[32] This figure does not include private investment that may be invested alongside programme funds. As at March 2016, the UK has secured 15.4 percent of Horizon 2020 funding so far awarded according to the former Department for Business, Innovation and

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[26] House of Lords Science and Technology Committee, *EU Membership and UK Science*, 20 April 2016, HL Paper 127 of session 2015–16, p 26.
[27] Royal Society, *UK Research and the European Union: The Role of the EU in Funding UK Research*, December 2015, p 3.
[28] House of Lords Science and Technology Committee, *EU Membership and UK Science*, 20 April 2016, HL Paper 127 of session 2015–16, p 29.
[29] ibid.
[30] Royal Society, *UK Research and the European Union: The Role of the EU in Funding UK Research*, December 2015, p 12.
[31] House of Lords Science and Technology Committee, *EU Membership and UK Science*, 20 April 2016, HL Paper 127 of session 2015–16, p 5.
[32] European Commission, 'What is Horizon 2020?', accessed 24 October 2016.

Skills.[33] The same source noted that this was similar to the level of funding received—between 2007–2013—as part of Framework Programme 7. The UK received approximately €7 billion from this programme, or 15.5 percent of total funding, second only to Germany.

In addition to Horizon 2020 funding, €1.6 billion of the UK's allocation of EU Structural and Investment Funds in the period 2014 to 2020 is expected to be spent on research and innovation projects. According to the former Department for Business, Innovation and Skills, this makes the UK one of the largest beneficiaries of EU research funding.[34]

2. Leaving the EU: Key Issues Raised

2.1 UK University Funding

On 21 June 2016, two days before the referendum, an article in the *Times Higher Education* considered whether EU students would be re-categorised as overseas students if the UK voted to leave the EU.[35] The article explained the legal basis that enabled universities to charge UK and EU students different fees to those paid by students from non-EU countries. It also noted the effect of the Equality Act 2010, which requires universities to "treat students in a way that does not discriminate on the grounds of any 'protected characteristic' such as race (which includes nationality), age, sex and disability. An exception to this rule is where the discrimination is mandated by other legislation". The author argued that were the UK to leave the EU and were subsequent negotiations to "conclude with EU students being re-categorised as overseas students (and a similar re-categorisation presumably being made for UK students studying elsewhere in the EU) then the secondary legislation allowing this differential fee status will require amendment". She continued:

> Once the amendment is enacted, universities are unlikely to have any option but to charge those EU students the higher level of overseas fees.
>
> Universities offering any special fee treatment for EU students that gives them preferential treatment in comparison to other overseas students could face claims of discrimination under the Equality Act, given that there will (presumably) no longer be an exception to the general principle of treating students equally in the terms of their admission and treatment.
>
> Any such claims may be quite difficult to defend, since the discrimination—if deemed to be direct—could not be justified. It is also difficult to identify other exceptions under equality law that might facilitate differential fee-charging for a limited period, absent this being authorised by legislation.[36]

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[33] Department for Business, Innovation and Skills, 'Written Evidence to the House of Commons Science and Technology Committee', March 2016.
[34] ibid.
[35] Elizabeth Jones, 'The Legal View: Brexit, Tuition Fees and Equality Legislation', *Times Higher Education*, 21 June 2016.
[36] ibid.

In July 2016, UCAS released figures on the number of applications universities had received for places by the 30 June 2016 deadline. The headline findings were:

> In total 674,890 people applied to full-time courses in UK higher education by the 30 June deadline this year. This is an increase of 1,850 applicants compared to this point in the last cycle, giving an overall percentage increase of 0 percent.
>
> Of these, 553,740 people applied from the UK, an increase [of] 150 on this point in 2015, an overall percentage change of 0 percent.
>
> The number of EU applicants rose by 6 percent (+2,920) to 51,850. The number of applicants from outside the EU decreased by 2 percent (-1,230) to 69,300.[37]

In October 2016, UCAS published its first statistical release for the 2017 cycle, covering the 15 October deadline for applications for medicine, dentistry, and veterinary degrees, as well as for all courses at the University of Cambridge and the University of Oxford. It found that:

> Applicants from the EU to this deadline have fallen by 9 percent (-620 people) to 6,240, ending a trend of annual increases over recent years. EU applicant numbers for this 2017 entry cycle are close to where they were for the 2015 cycle, reversing the 8 percent increase seen in the previous (2016) cycle [for October applications].
>
> Applicant numbers from outside the EU have increased by a similar amount as last year, 1 percent, to 11,510 people.[38]

However, UCAS noted that "typically, only 10 percent of eventual applicants apply by this stage so the full picture of demand for UK higher education, including from EU students, will only be clear after the main January deadline".

Following the referendum result in June and subsequent uncertainties about the status of EU students after the UK leaves the EU, Universities UK published a 'short-term political priorities' page in which it urged the Government to "implement a transitional period where action can be taken and time-limited commitments can be made to provide stability, create confidence and address uncertainty during the pre-exit period and immediately afterwards".[39] It set out the actions it would like the Government to prioritise with regard to students as follows:

- Provide immediate reassurances to EU students considering coming to the UK to study in academic year 2017–18 that they will continue to pay the same tuition fees as home students, and have the same access to student loans as they currently do, and for this to apply for the duration of their course, recognising that the UCAS cycle for 2017–18 has already opened.

- Provide a similar guarantee regarding tuition fee status and access to student financial support for EU students starting courses in 2018–19. This would be a short-term transitional measure for students starting ahead of the date of the UK's exit from the EU and would not prejudice future policy or negotiations.

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[37] UCAS, '2016 Cycle Applicant Figures—30 June Deadline', 14 July 2016.
[38] UCAS, 'Applicant Numbers to 'Early Deadline' University Courses Increase by One Per Cent, UCAS Figures Reveal Today', 26 October 2016.
[39] Universities UK, 'UUK Short-term Political Priorities', accessed 25 October 2016.

- Guarantee that universities will continue to be allowed to charge EU students commencing a course in 2016–17, 2017–18 and 2018–19 the same fees as home students for the duration of their course without risk of legal challenge.

In a speech delivered on 4 July 2016, Nick Hillman, Director of the Higher Education Policy Institute, argued that the "full consequences of EU withdrawal for UK higher education institutions are more nuanced than some of the debates to date have suggested".[40] The *Times Higher Education* reported that:

> Mr Hillman said that some have warned "that Brexit will lead to a funding crisis as students from other EU nations are deterred from coming to the UK. Yet, while fewer EU students would make our campuses less diverse and risk the global reputation of our universities, it would not necessarily affect their income".
>
> "You could charge more to each EU student who does still come, as you do for your other international students. Or you could opt to keep your fees for those from EU states at £9,000 or thereabouts and offer a competitive advantage against other UK institutions who move their EU students on to the higher international fee level".
>
> Mr Hillman added that he was "not advising you to do either of those things and, even if you did, you might conceivably still be out of pocket", but merely arguing that "we are only now coming to think about all the questions and not all the possible answers are obvious".
>
> He continued: "There may even be new opportunities. Imagine, for example, if one response to Brexit was to spend the funds saved by no longer having to pay loans to EU students […] on a new and ambitious outward mobility strategy in which UK citizens are encouraged to spend time studying abroad".[41]

On 11 October 2016, the Department for Education announced that EU students applying for university places in England in the 2017–18 academic year would continue to be eligible for student loans and grants—and would be for the duration of their course.[42] The release continued:

> The move will help give universities and colleges certainty over future funding, while assuring prospective students applying to study at one of the UK's world leading universities that they will not have the terms of their funding changed if the UK leaves the EU during their studies. The same assurance will be available for EU students studying in further education.
>
> Today's announcement follows assurances given by the Government in June shortly after the EU referendum result. This included immediate guarantees that students currently in higher or further education, and those applying for a place this year (2016 to 2017) would continue to be able to access student funding support—including loans and grants—under the current eligibility criteria.[43]

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[40] John Morgan, 'HEPI Director: Brexit May Bring 'New Opportunities' in Sector', *Times Higher Education*, 12 July 2016.
[41] ibid.
[42] Department for Education press release, 'Funding Support for EU Students', 11 October 2016.
[43] ibid.

Ministers in Scotland, Wales and Northern Ireland have also guaranteed that EU nationals who intend to begin studying in the academic year 2017–18 will also continue to receive financial support.[44]

2.2 UK Scientific Research Funding

Prior to the referendum on the UK's continued membership of the UK held on 23 June 2016, parliamentary committees and the Royal Society produced a number of reports examining the EU's relationship with UK science.

The House of Lords Science and Technology Committee published a report in April 2016 following the conclusion of its inquiry into the relationship between EU membership and UK science.[45] The Committee summarised the key findings from the report as follows:

> **Funding**
> The status of the funding relationship between the UK and the EU is a complex one, but also one that bestows significant value to UK science from the European Union. Nearly one fifth (18.3 percent) of all the UK's incoming EU funding goes on scientific research and development.
>
> The European Union's main funding system for science rewards excellence and the inquiry heard that the UK is one of the EU's top performers in terms of securing these competitive funding streams. This situation differs when funds for building capacity in science and research are considered.
>
> **Business Funding**
> The Committee is concerned over the poor level of engagement by large businesses in securing EU funding. We are below the EU average and lag behind competitor nations such as Germany and France. Given that 64 percent of research and development in the UK is conducted by businesses, this is a serious failing in the current set-up.
>
> **Collaboration**
> The inquiry heard that collaborative opportunities are perhaps the most significant benefit that EU membership affords science and research in the UK. The Committee heard of one example, a pan European bioscience research project called ELIXIR, which witnesses believed was headquartered in the UK as a result of our EU membership. However, it should be noted that of the UK's top five collaborative partners, two are outside the EU (the US and Australia).
>
> **Freedom of Movement**
> The Committee heard countless assertions that the ease with which talented researchers and scientists can move between the UK and across the rest of the EU is an enormous advantage to our country's science community. The report agrees that this freedom of movement is an absolutely key benefit to the UK, and every effort should be made to preserve it.

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[44] See: NI Direct, 'Students From Other EU Countries'; Welsh Government, 'EU Nationals and Student Finance in Wales'; and Student Awards Agency Scotland, 'EU Nationals and Student Funding in Scotland—the UK EU Referendum Result', all accessed 27 October 2016.

[45] House of Lords Science and Technology Committee, *EU Membership and UK Science*, 20 April 2016, HL Paper 127 of session 2015–16. At the time of writing, the Government had yet to respond to the report.

Brexit

The Committee examined the implications of alternatives to the UK being a full EU member state. One example would be becoming an associated country. The inquiry heard that the UK would still be able to receive EU funds, and would continue with involvement in European and international scientific projects, but many thought that it would no longer have the same level of high-level strategic influence. The Committee concluded that further investigation is necessary to ascertain how Brexit might impact our currently influential position in Europe.[46]

The House debated the Committee's report on 15 June 2016 as part of a wider debate on the UK's membership of the EU, eight days before the referendum vote was held.[47] During this debate, Lord Faulks, then Minister of State at the Ministry of Justice, set out the Government's view that the UK's involvement in EU research and science programmes was beneficial:

> The UK plays a leading role in many aspects of EU research and science programmes. These provide access to opportunities of a different scale and scope from those that are possible nationally.
>
> The UK received over £7 billion in EU funding for science and research between 2007 and 2013, second only to Germany. However, there is still scope for improvement, both in how the EU manages science funding and in simplifying the bureaucracy and transparency of funding instruments. The Government are keen to ensure that EU decision-making is based on the best scientific evidence. The UK has robust systems in place for providing science advice to government. Similar systems at EU level are currently being reformed.[48]

Lord Faulks also quoted Jo Johnson, Minister of State for Universities, Science, Research and Innovation, when he gave evidence to the Committee's inquiry earlier in the year. Mr Johnson had stated:

> Britain's success as a science powerhouse hinges on our ability to collaborate with the best minds from across Europe and the world. This report is further evidence that the UK's influential position would be diminished if we cut ourselves off from the rich sources of EU funding, the access to valuable shared research facilities and the flow of talented researchers that provide so many opportunities to our world-leading institutions.[49]

On 11 June 2016, the House of Commons Science and Technology Committee published a report following the conclusion of its inquiry into EU regulation of the life sciences.[50] Commenting on this report at the time of publication, Nicola Blackwood MP, chair of the Committee, stated:

> While there is no question the EU needs to improve its approach to evidence based policy and the responsiveness of its regulation, it is clear that there are benefits of being

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[46] House of Lords Science and Technology Committee, 'UK Universities Benefit While Businesses Lose Out from EU Membership', 20 April 2016.
[47] HL *Hansard*, 15 June 2016, cols 1221–90.
[48] ibid, cols 1286–7.
[49] ibid, col 1287.
[50] House of Commons Science and Technology Committee, *EU Regulation of the Life Sciences*, 11 June 2016, HC 158 of session 2016–17. At the time of writing, the Government had yet to respond to the report.

> in the EU for UK life sciences and research bodies in terms of collaboration and access to an EU market many times bigger than the UK market alone. If we left, our life sciences sector would still have to follow EU regulations to sell in the single market. But Britain wouldn't get a say in setting those rules putting us at a competitive disadvantage.
>
> The Swiss experience in particular should be a cautionary tale. When the Swiss voted to curtail free movement of people, the EU revoked access [to] science funding and collaboration, undermining the country's science sector. Following lengthy negotiations Switzerland was permitted re-entry to Horizon 2020 but on much more restrictive terms. Furthermore, non-member states do not own the IP [intellectual property] of any research they do conduct in collaboration with the EU so in the event of Brexit the value of any EU based research for exploitation may be limited.
>
> In light of this, the Government must conduct a risk analysis of the impact that a vote to leave would have on science funding and international collaboration. Ministers must put in place contingency plans to protect us from any adverse consequences for our science and innovation sector as well as consolidating any benefits.[51]

The Royal Society conducted a three-part project gathering evidence about the influence of the UK's relationship with the EU on UK research.[52] The three reports produced as part of this project are entitled: *The Role of the EU in Funding UK Research* (December 2015), *The Role of the EU in International Research Collaboration and Researcher Mobility* (May 2016), and *The Role of EU Regulation and Policy in Governing UK Research* (April 2016). The reports provide background information, statistics and analysis on these subjects. The Royal Society has summarised the conclusions of the three reports as follows:

> **Funding UK Research**
> It is estimated that the UK received €8.8 billion from the most recently completed EU research programme (2007–2013), having contributed an estimated €5.4 billion. Despite a reduction in UK government research funding to universities between 2009/10 and 2013/14, university research income increased over that period. This was largely due to increases in funding from the EU. Horizon 2020 is by far the EU['s] largest research funding programme and the majority of this funding requires international collaboration.
>
> **Collaboration and Mobility**
> Over half of the UK's research output in 2015 was the result of international collaboration and 60 percent of that included EU partners. While UK researchers most frequently collaborate with the US, the rate of collaboration with EU partners is increasing at a faster rate. Freedom of movement is often integral to collaboration, and this is easier within the EU. The strength of the UK's science base has been helped by being able to attract the best international talent to the UK and currently 16 percent of academic staff in our universities are from other EU countries with 12 percent from non-EU countries.
>
> **Regulation and Policy**
> International collaboration is aided by consistent policy and regulation and the UK currently plays a strong role in helping shape effective EU policy, such as the directive

[51] House of Commons Science and Technology Committee, 'Contingency Plans Needed to Protect UK Science', 11 June 2016.
[52] Royal Society, 'UK Research and the European Union', accessed 25 October 2016.

> governing the use of animals in research. In many cases such as this, the EU has set regulation that supports effective collaboration. However, there have also been examples where EU regulation, along with other factors, has been detrimental to the progress of good science such as in relation to GM crops.[53]

Following the referendum result, it was reported that researchers were losing grants.[54] The *Guardian* reported:

> In a confidential survey of the UK's Russell Group universities, the *Guardian* found cases of British academics being asked to leave EU-funded projects or to step down from leadership roles because they are considered a financial liability.
>
> In one case, an EU project officer recommended that a lead investigator drop all UK partners from a consortium because Britain's share of funding could not be guaranteed. The note implied that if UK organisations remained on the project, which is due to start in January 2017, the contract signing would be delayed until Britain had agreed a fresh deal with Europe […]
>
> One leading university said anecdotal evidence that UK applicants were being dropped from EU bids came almost straight after the vote. Since then they had witnessed "a substantial increase in definitive evidence that EU projects are reluctant to be in collaboration with UK partners, and that potentially all new funding opportunities from Horizon 2020 are closing".[55]

The campaign group Scientists for EU has been collecting information on "anecdotal stories of the Brexit vote causing immediate disruption to career plans, investments, and roles in new consortia that are forming" in order to "track how the result is impacting our science and innovation".[56]

Commenting on Horizon 2020 in June 2016, Jo Johnson, Minister of State for Universities, Science, Research and Innovation, had said that:

> It is business as usual for Horizon 2020. I would be concerned about any discrimination against UK participants and am in close touch with Commissioner Moedas on these issues.[57]

On 19 September 2016, the Government stated that it was not aware of delays in the communication of the outcome of funding decisions since the referendum and invited any researchers experiencing such delays to inform the Government via a dedicated email address.[58]

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[53] Royal Society, 'Statement from Venki Ramakrishnan, President of the Royal Society', accessed 25 October 2016.
[54] Pallab Ghosh, 'UK Scientists Speak About Brexit Pain', BBC News, 19 July 2016; Ian Sample, 'UK Scientists Dropped from EU Projects Because of Post-Brexit Funding Fears', *Guardian*, 11 July 2016; and Joe Gorman, 'It's Not 'Business as Usual' Until Brexit: UK Scientists are Already Feeling the Effects', *Guardian*, 12 July 2016.
[55] Ian Sample, 'UK Scientists Dropped from EU Projects Because of Post-Brexit Funding Fears', *Guardian*, 11 July 2016.
[56] Scientists for EU, 'Monitoring Brexit Vote Impact on UK Science', accessed 25 October 2016.
[57] Department for Business, Innovation and Skills, 'Speech: Leading the World in the New Age of Global Science', 30 June 2016.
[58] House of Lords, 'Written Question: EU Grants and Loans', 19 September 2016, HL1499.

In August 2016, the Government published a letter from David Gauke, Chief Secretary to the Treasury, to David Davis, Secretary of State for Exiting the European Union, committing the Government to guaranteeing EU funding commitments for research.[59] In an article commenting on this measure, the Department for Business, Energy and Industrial Strategy confirmed:

- The Treasury will underwrite funding for approved Horizon 2020 projects applied for before the UK leaves the European Union.
- The commitment will provide reassurance to applicants from the UK's research and innovation base when applying for EU research funding.

It stated that:

> As a result, British businesses and universities will have certainty over future funding and should continue to bid for competitive EU funds while the UK remains a member of the EU. The Treasury will underwrite the payment of such awards, even when specific projects continue beyond the UK's departure from the EU.
>
> The announcement follows [the] Government's commitment in last year's Spending Review to protect UK science spending in real terms, providing £26.3 billion from April 2016 to April 2021.[60]

In the same article, HM Treasury added:

> Where UK organisations bid directly to the European Commission on a competitive basis for EU funding projects while we are still a member of the EU, for example universities participating in Horizon 2020, the Treasury will underwrite the payments of such awards, even when specific projects continue beyond the UK's departure from the EU.
>
> As a result, British businesses and universities will have certainty over future funding and should continue to bid for competitive EU funds while the UK remains a member of the EU.[61]

The same month saw Jo Johnson, Minister of State for Universities, Science, Research and Innovation, write to the Earl of Selborne, chair of the House of Lords Science and Technology Committee, with details of the Government's decision to guarantee funding for Horizon 2020 projects agreed before the UK's withdrawal from the EU. He explained:

> For research activity bid for competitively while we remain a member of the EU we will work with the Commission to ensure payment when funds are awarded. The Treasury will underwrite the payment of such awards, even when specific projects continue beyond the UK's departure from the EU.

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[59] HM Treasury, *Letter from David Gauke MP to David Davis MP*, 12 August 2016.
[60] Department for Business, Energy and Industrial Strategy, 'News Story: Safeguarding Funding for Research and Innovation', 13 August 2016.
[61] HM Treasury news story, 'Chancellor Philip Hammond Guarantees EU Funding Beyond Date UK Leaves the EU', 13 August 2016.

> As we have always said since the referendum result, it's business as usual for Horizon 2020 projects. The UK will continue to be a world leader in international research and innovation, and we expect to ensure that close collaboration between the UK and the EU in science continues. I believe this decision […] will give British businesses, universities and their EU collaborative partners the necessary assurance and certainty needed to plan ahead.[62]

Following these concerns, Universities UK has since urged the Government to:

- Continue to communicate to other member states that the UK is a full member of Horizon 2020 and heavily promote EU funding opportunities to UK researchers.
- Build on the very welcome commitment to underwrite EU collaborative projects funded prior to the UK's exit from the EU by:
  - providing further detail on the projects and timescales covered by this announcement; and
  - extend existing assurances that funding used to underwrite Horizon 2020 awards will not come from raiding existing funding allocations within the science ring-fence (eg quality-related [QR] funding), past the end of the allocation of the current science and research budget.[63]

In terms of the UK's negotiations with the EU, in July 2016, the Prime Minister, Theresa May, was reported to have written to Professor Sir Paul Nurse, director of the Francis Crick Institute in London and a former president of the Royal Society, to "make clear that the Government's ongoing commitment to science and research remains steadfast".[64] The Prime Minister reiterated the Government's manifesto and spending review commitments to protect science and research funding in real terms and concluded her letter as follows:

> Finally, I would like to reassure you about the Government's commitment to ensuring a positive outcome for UK science as we exit the European Union. While we negotiate a new relationship with our European partners, we are not turning our back on European scientists. Our research base is enriched by the best minds from Europe and around the world—providing reassurance to these individuals and to UK researchers working in Europe will be a priority for the Government.[65]

During the referendum campaign, the group Scientists for Britain published a series of 'myth buster' articles on the UK's continued membership of the EU.[66] The group believes that "the UK science base is strong enough and adaptable enough to thrive in a post-Brexit

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[62] Department for Education and Department for Business, Energy and Industrial Strategy, *Letter from Jo Johnson MP to the Earl of Selborne*, 13 August 2016.
[63] Universities UK, 'UUK Short-term Political Priorities', accessed 25 October 2016.
[64] Niall Firth, 'Theresa May Reassures UK Scientists in Wake of Brexit Fears', *New Scientist*, 28 July 2016; Pallab Ghosh, 'PM Wants Positive Outcome for Science in Brexit Talks', BBC News, 28 July 2016; and 10 Downing Street, *Letter from the Prime Minister to Sir Paul Nurse*, 18 July 2016, p 1. Sir Paul led an independent review into the UK's research councils which reported in November 2015 (Department for Business, Innovation and Skills, 'Independent Report: Nurse Review of Research Councils—Recommendations', 19 November 2015).
[65] 10 Downing Street, *Letter from the Prime Minister to Sir Paul Nurse*, 18 July 2016, p 2.
[66] Scientists for Britain, 'Myth Busters', accessed 25 October 2016.

environment". In an article published on 25 June 2016 on the Scientists for Britain website entitled 'What Next for UK Science?', Dr Lee Upcraft stated:

> As a science community we need to come together and advise our government how best to negotiate favourable terms for continuing cooperation with the EU. We have repeatedly stressed that 16 non-EU countries collaborate on equal terms with their EU partners via associate agreements with the EU's research programme. In our view, this is the most likely model to pursue, and we can become the seventeenth member of this agreement. Together, we need to help the UK Government understand how best to secure the needs of UK science.
>
> We take this opportunity to directly address a point raised by many who called for remain; namely that [the] UK Government has become a poor supporter of UK science and that we have become overly dependent upon the EU funding of science. As part of our input to government, we, as a community need to become more vocal, more active and more assertive in promoting the benefits of science to the UK economy. If we have become reliant on EU funding, we need to explain to government how to address this.[67]

3. Ongoing Inquiries

House of Lords Science and Technology Committee

Following the result of the referendum held on 23 June 2016, the House of Lords Science and Technology Committee launched a short inquiry to follow-up its April 2016 report on EU membership and UK science.[68] The Committee has accepted written evidence and held its first oral evidence session on 19 July 2016. It took further evidence on 13 September and 25 October 2016.[69]

Evidence taken to date can be accessed via the Committee's website.[70]

House of Commons Science and Technology Committee

The House of Commons Science and Technology Committee has launched an inquiry on the subject of the implications and opportunities for science and research following the UK's withdrawal from the EU. The Committee has stated that oral and written evidence "so far has identified a number of potential risks and opportunities, for example concerning the mobility of scientists, collaborative research opportunities, funding, access to research facilities, regulation and market access, private sector investment [and] administrative burdens/costs".[71]

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[67] Scientists for Britain, 'What Next for UK Science', 25 June 2016.
[68] House of Lords Science and Technology Committee, 'EU Membership and UK Science Follow-up', accessed 25 October 2016.
[69] House of Lords Science and Technology Committee, 'Government Minister Questioned on Implication of Brexit for UK Science', 25 October 2016.
[70] House of Lords Science and Technology Committee, 'EU Membership and UK Science Follow-up', accessed 25 October 2016.
[71] House of Commons Science and Technology Committee, 'Leaving the EU: Implications and Opportunities for Science and Research Inquiry', accessed 25 October 2016.

The Committee is currently accepting written evidence. It took oral evidence on 5 and 13 July 2016 from witnesses including Jo Johnson, Minister of State for Universities, Science, Research and Innovation. Mr Johnson provided further evidence on 26 October 2016.[72]

Evidence taken to date can be accessed via the Committee's website.[73]

4. Further Reading

- Office for National Statistics, 'Statistical Bulletin: UK Gross Domestic Expenditure on Research and Development—2014', 18 March 2016
- House of Commons Library, *Spending on Research and Development in the UK*, 21 July 2015
- House of Commons Library, *Support for Science*, 15 July 2016
- Royal Society, *The Role of the EU in Funding UK Research*, December 2015
- Royal Society, *The Role of the EU in International Research Collaboration and Researcher Mobility*, May 2016
- Royal Society, *The Role of EU Regulation and Policy in Governing UK Research*, April 2016
- European Parliamentary Research Service, *Briefing: Overview of EU Funds for Research and Innovation*, September 2015

[72] House of Commons Science and Technology Committee, 'Ministers Questioned on the Implications of Leaving the EU', 25 October 2016.
[73] House of Commons Science and Technology Committee, 'Leaving the EU: Implications and Opportunities for Science and Research Inquiry', accessed 25 October 2016.